

# Edis Operators Manual

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Abekas EDIS

OPERATORS MANUAL

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## CONTENTS

INTRODUCTION . . . . .	3
CONNECTIONS . . . . .	4
CONTROL PANEL . . . . .	10
KEYFRAME SET UP . . . . .	17
SEQUENCE CREATION . . . . .	18
TEST SEQUENCE SET UP . . . . .	19
MANUAL EFFECTS . . . . .	25

## INTRODUCTION

The EDIS is a dual channel Frame Store with multiple inputs per channel and digital effects including zooms with spins tumbles and trajectory on each channel. The equipment comprises interconnected items of hardware:-

- A. The mainframe.
- B. A digital effects controller (Remote Control Panel).
- C. An engineering control panel.

The mainframe (A) comprises the two Frame Stores and includes the electronics, P.C.B.'s. and power supplies. It is designed for 19" rack mounting and includes cooling fans and air filters in the 5U rack, it does not therefore need any special environmental conditions, although it should be mounted in the main TV equipment rack. There should be an adequate air supply to the front filter and the airflow from the rear sides of the equipment should be unimpeded. The mainframe should not be located in a "hot spot".

As all P.C.B.'s are accessible from the front of the mainframe it is not necessary for the EDIS to be mounted on rack slides. The unit is designed for mounting on rack shelves or shelf brackets, and should be supported properly on both sides throughout its depth.

The unit should NOT be supported by the front flanges alone, some rear support MUST be provided.

A ten metre serial data cable connects the mainframe (A) to the digital effects controller (B). The digital effects controller is intended for mounting in the production desk and then connects via a short ribbon cable to the engineering control panel (C) which is intended for mounting in the adjacent vision control desk or engineering desk, or above the effects controller.

Maximum cable lengths may be extended to 100 metres for the serial data cable and 10 metres for the ribbon cable.

Power supplies are factory set for the range 200/250 Vac and no adjustment is necessary. A 2 metre power supply cable is supplied.

The EDIS requires a genlock reference. This can be Colour Bars or Colour Black fed from the system SPG or Mixer. EDIS will work directly with simple VTR's, eg Low Band or High Band U-Matic, provided that these are driven from the Servo Reference available from the EDIS mainframe.

## CONNECTIONS

A typical connection diagram is shown on page 4A, with a plan of the connectors of the IDIS mainframe rear panel on page 4B.

Referring to the connectors shown on the rear panel of EDIS the purpose of each connector is detailed:-

**GPI:** This is a 25 way D connector and allows access to EDIS general purpose inputs (GPI) and EDIS general purpose outputs (GPO). The functions available on this connector are controlled by software. The GPI pins allow control of the following functions of EDIS:-

pin 15	Run forward
pin 13	Sequence return
pin 11	Halt
pin 17	Freeze toggle
pins 10, 12, 14, 16	0 volt (Ground)

To operate the function the corresponding pin must be connected to 0 volts (pin 10), or the pin may have a TTL logic low applied to it.

The GPO pins are used to provide 'tally' information:-

pin 24 - pin 25	Input one active
pin 22 - pin 23	Input two active
pin 20 - pin 21	Input three active
pin 18 - pin 19	Input four active

The corresponding GPO pins will connect together via internal reed switches when the input corresponding to that pin is appearing on the main output picture (max current 200 mA).

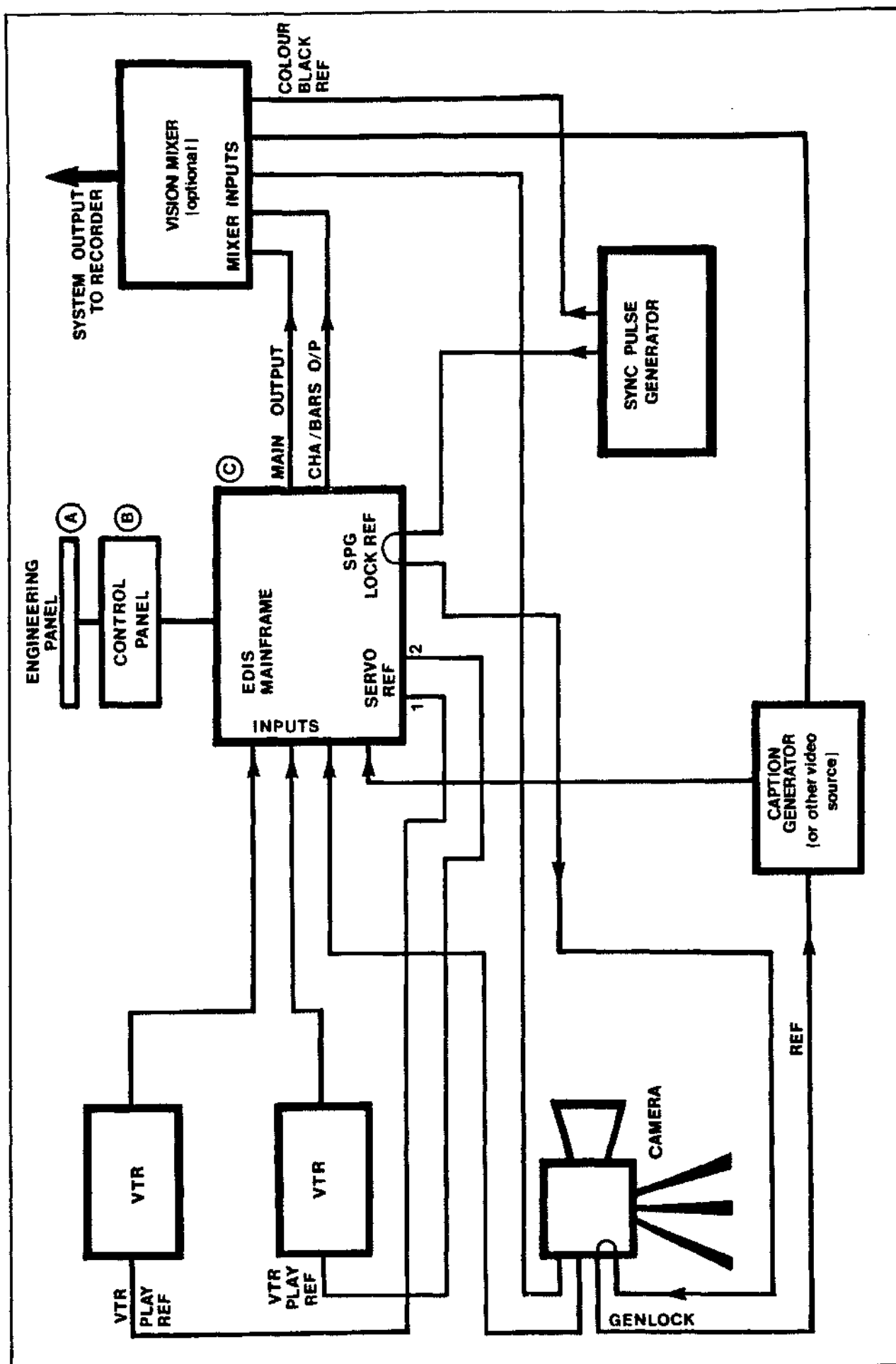
**CONTROL PANEL** This 15 way D connector provides the serial link to the Digital Effects Remote Control Panel (Control Panel). The sole purpose of this connector is to send and receive signals and power the Control Panel via the control panel interconnect cable supplied with EDIS.

**NB** As the power to the control panel is supplied via this connector it should NOT be removed while the main frame is on.

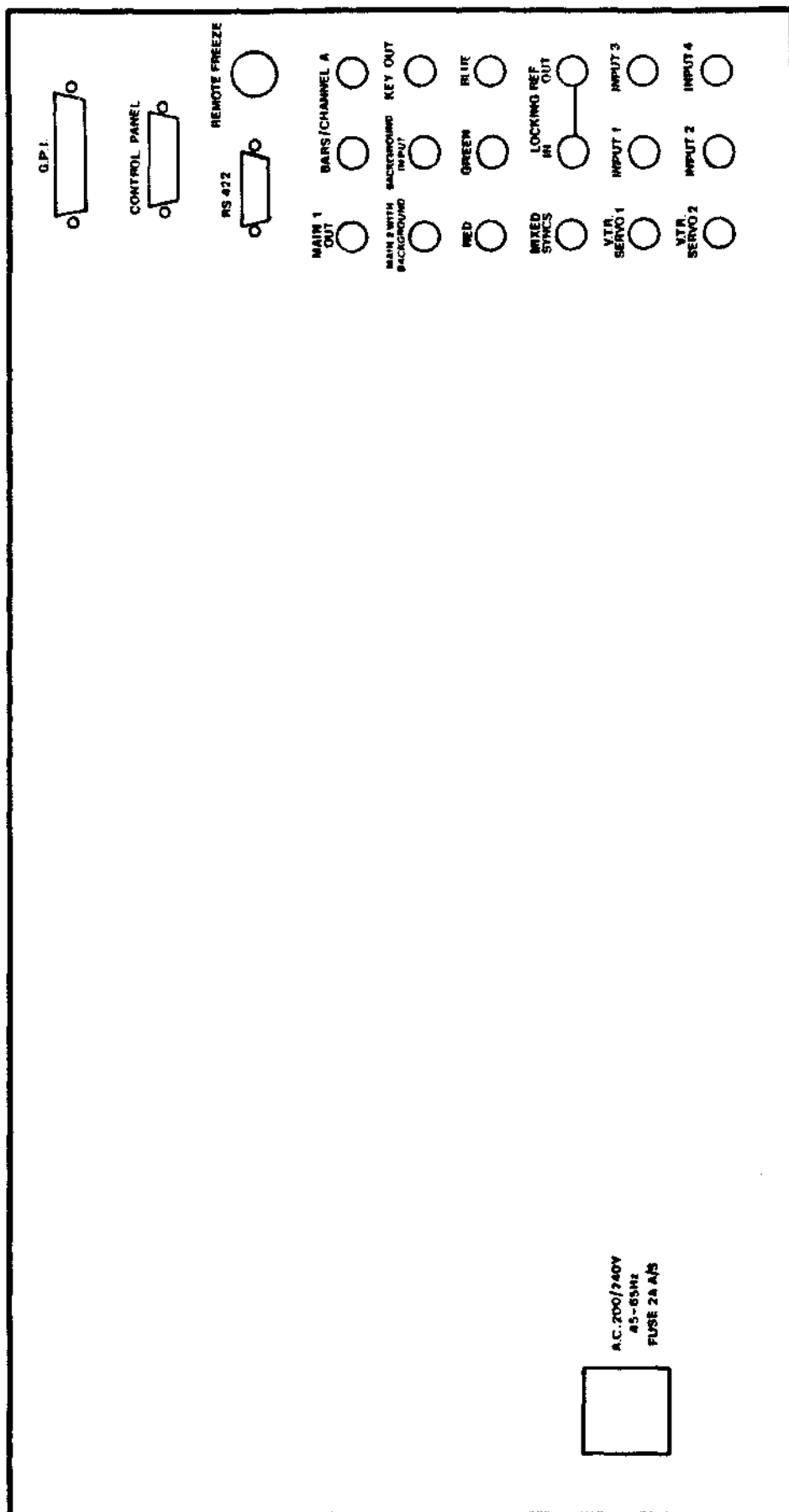
**RS 422** This connector provides a serial link to a computer or terminal to control IDIS via a system and not by the Control Panel. In the standard EDIS configuration this connector is inactive.

**REMOTE FREEZE** This DIN connector allows EDIS to freeze the input picture on either channel. This connector would normally be used when connected to an electronic Editor System, thus allowing system control of freeze independently of the control panel. The connections are as follows:-

pin 3	freeze channel A
pin 1	freeze channel B
pin 2	0 volt



TYPICAL CONNECTION DIAGRAM



As before a connection to 0 volt or a TTL low will activate the function. In this case while the pin is held low the appropriate picture will be frozen, when the pin returns to a high level, the corresponding picture will be unfrozen.

MAIN 1 OUT This BNC connector is the primary output of EDIS. Depending on the state of the control panel this output will contain pictures from both or either channel of EDIS, keyed into a black background or a colour filled background (matte).

Bars/Channel A These two BNC's provide two identical outputs of either Colour Bars, Colour Black or the A channel of EDIS. The selection of this is performed with the two switches on the front of the CODER board. The left hand switch selects either 100% Colour Bars or Colour Black. The right hand switch selects either Channel A or the selection made by the left hand switch.

MAIN 2 WITH BACKGROUND This BNC contains the output of EDIS, as the MAIN 1 output, but instead of keying the output with black or matte, the output is keyed into a video background provided from the users system.

NB If the user does not provide a background for use on the MAIN 2 output, the MAIN 2 output will not contain sync or colour burst as these are taken from the background input.

BACKGROUND This BNC is for the user to provide a video signal to be used as a background for the MAIN 2 output.

NB The video applied here must be independently timed and phased to match the EDIS output to give correct colour and picture position on MAIN 2.

KEY OUT This BNC outputs a 1 volt non composite key signal which is at maximum level when either Channel A or Channel B pictures are present on EDIS output. The purpose of this key is to allow the user to use a MIXER downstream of EDIS to provide extra capability and flexibility. As the timing situation will vary depending on which type of mixer EDIS is interfaced to, controls are provided on the front right hand side of the DAC board to allow the user to adjust the timing of the left and right edges of the key signal to suit his particular requirement (see page 7).

RED GREEN BLUE MIXED SYNCs These outputs are the individual colour outputs of EDIS. They can be used if an external coder is to be used (the case if SECAM output is required), or if outputs are to be fed to a chroma key or colour corrector.

Alternatively the RGB output can be changed for a component output (YUV) to be recorded by Betacam or for use with a component mixer. The RGB/YUV is changed with links on the DAC board (LK4 LK5 LK6). Normally from the factory these links will be set for RGB the forward facing position.



VTR SERVO 1, VTR SERVO 2 These BNC's provide identical outputs for feeding to VTR's connected as inputs to EDIS. Supplied from the factory these outputs will be colour black. The outputs can be changed to sync with links LK1 LK2 on the CODER board. LK1 turns off the colour burst and LK2 switches the sync amplitude from 300 mv to 2V p-p (terminated in 75 OHM).

NB It is important that if VTR's which do not have an inbuilt TBC (eg Lowband - Highband U-Matic) are used as inputs to EDIS that the playback reference input of the VTR is connected to EDIS servo reference.

INPUT 1,2,3,4 These are the video input connections to EDIS. The connectors terminate on 75 OHM within EDIS. EDIS can handle a variety of different video sources but they must be referenced to the same reference as EDIS although there is no need to precisely time and phase the inputs, as would be the case when using a normal vision mixer etc.

LOCKING REF IN-OUT These two connectors provide a loop-through input for EDIS to use as its system reference. Ideally this reference should be colour black from a good quality source, or colour bars. It is not advisable to use a source that has changing picture information on it.

NB EDIS will NOT FUNCTION if the reference signal is not provided.

## ADJUSTMENTS

EDIS employs advanced technology and devices and circuitry designed to give reliable operation with the minimum of maintenance or adjustment. However there is a need for the user to be able to set EDIS to enable him to use EDIS within his own video system.

As with any video device there is a need for control of Gain, Black level, Chrominance level etc. These controls are available remotely on the Engineering control panel and will be discussed later.

Having connected EDIS within the video system and turned on the power, the most important adjustment will be to time the output of EDIS to match the system. If the output of EDIS is going to a video mixer this is easily done by taking a video input to EDIS which is also going to the mixer. By using the mixer to wipe between the video signal and the output of EDIS a comparison of the two is easily made. If the colour is incorrect from EDIS then adjust the subcarrier phase control, leftmost adjustment potentiometer on the SPG board, to obtain the correct colour. If the correct colour cannot be obtained it may be that the PAL IDENT within the system is different to EDIS in which case the SPG board should be pulled out and the position of LK3 changed, (it is advisable to turn off the power first), the board re-inserted and the potentiometer readjusted. If on the mixer comparison the picture from EDIS appears shifted left or right then the horizontal phase adjustment potentiometer, to the right of the previous adjustment, needs to be adjusted to align the EDIS picture.

If the A channel output of EDIS is also to be fed to a mixer, it may be necessary, after doing the previous adjustments, to trim the colour phasing by selecting video cable lengths connecting the EDIS A channel output to the mixer. In this case more precise adjustment will be necessary than can be done by a visual comparison using a wipe from the mixer, and a vectorscope or some other method would be necessary. Some mixers provide an internal timing indicator and this can be used, referring to the mixer manufacturers documentation.

In a simple system where the output of EDIS is going to a Video Recorder, adjustment of the timing potentiometers is not necessary.

If the key signal from EDIS is going to a mixer then the key controls on the right hand side of the DAC will need adjustment. The controls for A channel left and right are adjusted so that the A picture from EDIS, via the mixer and whilst it is keyed by the mixer, has its left and right edges neither cutting off the picture information or showing a black border. The controls for the B picture are adjusted the same way but affect the left and right edges of the B picture. Because the blanking of the source video inputs to EDIS can often be unspecified or inaccurate, it is best to switch on a coloured border on the pictures using the control panel in order to make the proper adjustments, also the pictures will need to be reduced in size and separated so they do not overlap.

## MAINFRAME SWITCHES

On the mainframe there are a number of switches to be found on the front of the circuit boards. The functions of the switches are as follows:-

**I/P PROC** This switch on the right hand side of the board selects PAL (left position) or SECAM (right position) as input to EDIS. Note there are two of these boards in EDIS. The left hand one affects the A channel input and the right hand board affects the B channel input.

**ADC** The switch on the left side of this board switches in a special digital ramp test signal. The normal position for this switch is left, moving it right switches on the ramp. The ramp will only be available if there is a video input present on the selected channel. The ramp will give large bands of colour which change from green to magenta across the screen. As with the I/P PROC there are two of these boards for the two channels.

**COMPUTER** On the right hand side of this is a spring loaded switch. This switch is used to RESET the computer and the control panel.

**CODER** The switch on the left selects Colour Bars (left position) or Colour Black (right position). The switch on the right selects either A channel video (left position) or the output from the other switch (Bars or Black).

**NOTE:** Apart from the controls described, NO ATTEMPT should be made to adjust other potentiometers, inductors and variable capacitors. These are factory preset and any unauthorised adjustments could severely degrade the performance of the unit. The only controls to be adjusted are at the front edges of the boards.

## ENGINEERING CONTROL PANEL

The engineering control panel is connected to the Effects control panel by a 34 way ribbon cable which can be a maximum of 10 metres in length and provides frequently used controls. It consists of six active engineering controls and two selector switches.

The engineering values selected by these controls may be individually assigned to each and every one of the four inputs and then held in memory. This enables an input to be balanced and transferred between channels without affecting channel balance for other inputs.

The controls are as follows:-

- (i) Video Gain This gain control has a range of  $\pm 3\text{dB}$  and operates on the selected input composite signal.
- (ii) Chroma Gain The chrominance only gain control has a range of  $\pm 2\text{dB}$ .
- (iii) Black level Sets output black level with respect to blanking over a range of  $\pm 10\%$ .
- (iv) R-Y Colour Correction Offsets the zero chroma level in the R-Y axis. This is a digital offset added or subtracted from the chroma level.
- (v) B-Y Colour Correction Digitally offsets the zero chroma level in the B-Y axis.
- (vi) Chroma Delay This control adjusts chrominance delay with respect to luminance. Both advance and retard is provided in steps of 140 n secs.
- (vii) Input Select 1-4 This switch selects the input to be adjusted by the controls above and applies only to that input irrespective of the channel in use.
- (viii) Set Up Mode Switch:-
  - Set** This activates the controls on the input selected.
  - Off** This disables the controls.
  - Norm** This resets the selected input to unity values irrespective of the position of the variable controls.

## CONTROL PANEL

EDIS has a large number of features built into one machine, which allow the generation of some complex video effects. EDIS can act as a mixer and allow mixing or wiping of video signals with a background and borders. EDIS can freeze or strobe pictures, reverse them, mosaic them and posterize them. EDIS can zoom, compress and push pictures. EDIS can combine many of the above effects within one move or a sequence of moves.

BEFORE PRESSING ANY KEYS : NB KEY PRESSES WILL NOT BE ALLOWED IF THE T-BAR IS NOT AT ONE END OF ITS TRAVEL. PRESSING A KEY WHEN THE T-BAR IS PART WAY WILL CAUSE THE LEDS BESIDE IT TO FLASH.

The basis on which EDIS works is called a keyframe. A keyframe consists of a situation where the two channels of EDIS have their pictures in a particular situation which you, the user, have set up. EDIS can then move or transition from this particular keyframe to another different keyframe. To illustrate this and to become familiar with EDIS try the following procedure:-

Having switched on EDIS and with video inputs feeding inputs 1 and 2 press the following buttons and see how easy it is to get EDIS to work for you.

Press 'SEQUENCE', now to see the effect take place either move the T-Bar or press 'RUN'. To change the speed when using 'RUN', press 'DURATION', then press three number keys eg 2,7,9, to give a time of 279 fields to 'RUN' the effect sequence. Now press 'SEQUENCE RETURN' and the sequence will run back to the start at the required speed.

NB The sequence you should have watched was programmed in the factory - if your unit is not new or if a dealer, distributor or other user has separately programmed or de-programmed the last preset sequence that our test engineers placed in the machine you will not see the effect we desired. Details of how to program this particular sequence will be found on page 19.

There now follows a description of the functions of the switches and controls of the control panel.

The switches are arranged in groups of similar types of functions, eg switches effect, mix, custom, wipe, program, sequence are in the MODE group.

Most of the switches have illuminated leds to indicate that the switch has been pressed or that function is in use.

There is a panel of numeric displays to indicate additional information. Beside the T-Bar there are two indicators to show the state of the T-Bar.

## **INPUT group**

The upper row of this group of switches assigns the input video selection for the A channel of EDIS (CH A), similarly the lower row select inputs for channel B (CH B).

The input swlches 1,2,3,4 select inputs 1,2,3,4 respectively. The 'BLACK' switch ignores the video input and replaces it with black. The 'CUT' switch puts the selection of the input row of that channel as foreground on the output of EDIS.

This means that if the picture sizes of channel A and channel B of EDIS are full size pressing the CH A 'CUT' switch will put the A channel picture on the EDIS output, pressing B channel 'CUT' will put the B channel input picture to the output. If the pictures sizes are different, (say the A channel picture is reduced size and the B channel is normal), then pressing A CH 'CUT' will give an output on EDIS where the A channel picture is foreground and the B channel picture is background. Pressing the B CH 'CUT' switch, the B channel picture is foreground, the A channel is background and not visible because It is covered by the B channel picture which is bigger than A. When pressing the 'CUT' switches the indicator led on the 'PRIORITY' switch will change to show that B channel has priority, ie B channel is foreground.

Pressing the PRIORITY switch will change the 'CUT' indicator to show which channel is foreground and will toggle its own indicator.

Above and below the 'PRIORITY' switch are 'SET A' and 'SET B' switches. These switches enable the controls and switches in the SET UP group to be used to set up picture, size, crop positions etc for the A and B channels. If neither 'SET A' or 'SET B' is on, then the joystick will not be operative. Switches in the SET UP group are coloured red for easy identification.

## **CH A STATICS, CH B STATICS groups**

These two groups of swiches operate on the A channel and the B channel in an identical manner. So only the operation of the 'CH A STATICS' group is described as the 'CH B STATICS' function is exactly the same but affecting the B channel picture.

**CHROMA POSTERISE** This switch will posterise the chrominance component of the video. The level of posterisation is adjusted with the control above the switch.

**LUMINANCE POSTERISE** This switch is similar to the CHROMA POSTERISE switch but affects the luminance of the video, again the level is controlled by the control above the switch.

**MOSAIC** This switch switches on the mosaic effect which breaks the picture up into small boxes or tiles. The size of the tiles is adjusted with the control above the switch.

**STROBE** This switch makes the picture strobe, i.e. it will freeze for a time then take a new picture and freeze that for a time and so on. The rate of strobe is adjusted with the control above the switch.

**FREEZE** This switch causes the picture to freeze.

**MIRROR** This switch reverses the picture from left to right creating a mirror effect.

**INVERT** This switch turns the picture upside down.

**NORMAL SIZE** This switch returns the picture to normal size and position, it also clears any other static functions with the exception of 'CROP'.

**CROP ON** This switch puts on 'CROP'. The amount of cropping which cuts away the picture is set up using the red switches in the SET UP group.

**BORDER ON** This puts on a coloured border around the picture. The border size and colour is set up using the red switches in the SET UP group.

#### MODE group

Because EDIS allows very complex effects to be set up, switches in this group do not necessarily cancel the other functions within the same group. TO FORCE ONLY THE SIMPLE FUNCTION THE SWITCH MUST BE PRESSED TWICE.

**CUSTOM** The custom mode, which is active when EDIS is first switched on, allows the setting up of KEYFRAMES (custom positions) and the transition from one keyframe to another. The number shown in the display window above the CURRENT CUSTOM NUMBER is the number of the keyframe currently in use and at the output of EDIS. The number above GO TO is the number of the CUSTOM position that you will GO TO in a transition.

**MIX** By pressing the switch twice, EDIS will now be able to MIX between the two channels. If the two channels have pictures of different sizes in different positions the MIX will only be effected where the two pictures overlap. If CUSTOM is illuminated as well as MIX then when a transition between CUSTOM positions takes place a MIX will also be performed within the transition.

**EFFECT** By pressing this switch twice then the EDIS will perform the effect selected with the lower row of the EFFECT MODIFY switches, ie PUSH, REVEAL, CONCEAL and COMPRESS. If CUSTOM is illuminated as well as EFFECT then when a transition occurs an EFFECT will also take place within the transition.

**WIPE** By pressing this switch twice the EDIS will perform a WIPE between the two channels. If the channels have pictures of different sizes and positions the WIPE function will force the A channel picture to be the same size and position as the B channel. Again if CUSTOM is illuminated as well as WIPE then a WIPE will be performed within the CUSTOM transition.

**PROGRAM** This switch will be inoperative unless SEQUENCE is on. In this case pressing PROGRAM will allow a new SEQUENCE to be PROGRAMMED into EDIS. Pressing PROGRAM again will then allow the SEQUENCE to be RUN. Details of SEQUENCE PROGRAMMING will be found on page 18.

**SEQUENCE** Pressing this switch will allow a SEQUENCE to be RUN or PROGRAMMED. To clear the SEQUENCE function one of the other MODE switches should be pressed (except PROGRAM).

### **EFFECT MODIFY group**

This group of switches is broken down functionally into two rows. The switches in this group modify how a transition will operate when the T-Bar is moved or RUN is pressed.

**BOTTOM ROW** These switches will be operative if EFFECT is on. They will all allow an effect to function in a manner selected with any of the first eight switches in the EFFECT/WIPE SELECT group, eg PUSH pressed, followed by the DOWN ARROW switch will PUSH down the foreground channel picture followed by the other channel picture, when RUN is pressed or the T-Bar is moved.

**PUSH** This will push the foreground channel picture and pull the other channel picture in the direction selected on the EFFECT/WIPE SELECT group.

**REVEAL** This will move the foreground picture, in the direction selected on the EFFECT/WIPE SELECT group switches, REVEALING the other channel picture (which does not move).

**CONCEAL** This will move the hidden picture in the direction selected on the EFFECT/WIPE SELECT group switches, CONCEALING the foreground picture (which does not move).

**COMPRESS** This will COMPRESS the foreground picture and EXPAND the other channel picture, in the direction selected with the EFFECT/ WIPE SELECT switches. If REVEAL is on as well as COMPRESS then only the foreground picture will COMPRESS in the selected direction. The other channel will not move. If CONCEAL is on as well as COMPRESS then the hidden picture will EXPAND and CONCEAL the foreground picture. The foreground picture will not move.

NB In all of the simple effect modes detailed above, if the pictures are of different sizes or positions then the B channel picture will be forced to be the same size and position as the A channel picture.



**UPPER ROW** These switches become effective depending on the state of CUSTOM, WIPE, SET A and SET B, and hence are coloured red.

**FLIP** This switch is active when CUSTOM is on and either SET A or SET B is on. In the case of SET A and CUSTOM then the A channel picture will FLIP as the T-Bar or RUN transition takes place. If SET B is on then the B channel picture will FLIP in a transition.

**TUMBLE** The conditions for this switch are the same as FLIP but now the picture will TUMBLE during a transition.

**TRAJECTORY** The conditions for this switch are the same as for FLIP and TUMBLE. When activated, on moving the picture through a transition, the move will take place following a curved path instead of a direct path for the selected channel (SET A or SET B). Trajectory direction i.e. clockwise or anti-clockwise, is determined by whether trajectory is commanded at the beginning or the end of a transition. Setting 'trajectory on' prior to moving will cause an anti-clockwise curve. Setting 'trajectory on' after the move will cause a clockwise curve. Setting trajectory at beginning and end will also give a clockwise curve, (i.e. end setting has priority).

N.B. Trajectory will be automatically cleared if further picture settings are made and will need to be re-commanded if such settings have been made. This is because the trajectory path is calculated using picture sizes and positions, any previous trajectory path will contain irrelevant values, they are therefore automatically cancelled.

**WIPE BORDER** This switch will only be operative if WIPE is on. When selected it will put a border on the edges of the WIPE pattern selected. The colour of this border will be the same as the colour of MATTE. The width of this border is not adjustable.

#### EFFECT WIPE SELECT group

These switches are used to select the direction and type of WIPE or EFFECT. The single arrow switches are usable in WIPE and EFFECT mode. The other four switches are used in WIPE mode only. The vertical double arrow gives a WIPE which closes from the top and bottom of the picture finishing at the middle. The horizontal double arrow closes from the left and right finishing up in the middle. The BOX switch will give a Box wipe and the CROSS key will give a CROSS wipe.

**REMOTE** This switch enables the GPI to function. Via the GPI EDIS can be made to RUN, HALT, RETURN SEQUENCE or FREEZE.

**REHEARSE** When this switch is activated then if a SEQUENCE or a CUSTOM move is RUN, then after the RUN has completed the indicator on the REHEARSE switch will flash for a few seconds and then EDIS will return to the situation before RUN was initiated, ready for the sequence or move to be taken again. Pressing REHEARSE when it is on will cancel rehearse.

**NORMALISE ALL** Pressing this switch will return EDIS to its switch on state with both channels having normal size pictures.

**TRACK** When this switch is active, only when CUSTOM only mode is on, then the pictures on A and B channels are forced to move together. This is particularly useful for creating dual channel effects within a small size picture, e.g. cube making.

**GO TO** This switch allows setting of the destination custom position. After pressing this switch two digits are entered on the numeric keys and the right hand numeric display will show what number has been entered, (00 - 99).

**COPY** This switch allows the current custom position to be COPIED to another CUSTOM NUMBER. After pressing the COPY switch two digits are entered on the numeric keys and the CURRENT CUSTOM position will be copied to the entered CUSTOM NUMBER.

**NUMERIC KEYS (0 - 9, CLEAR, ENTER)** These switches are used to enter numeric information. If a CUSTOM NUMBER is to be entered then two digits are required, ie 00 to 99, and if a time (DURATION) is to be entered then three digits are required (000 to 999). Leading zeroes are required. In SEQUENCE PROGRAM mode then a single digit is required and in this case ENTER is pressed. The CLEAR switch in CUSTOM mode will CLEAR the CURRENT CUSTOM number to 00. In PROGRAM SEQUENCE mode then pressing CLEAR followed by the SEQUENCE KEY FRAME number will CLEAR that entry in the SEQUENCE.

#### TAKE group

These switches control the operation of a transition or sequence together with RUN and T-Bar movement.

**DURATION** After pressing this switch a three digit number is entered on the numeric keys and the DURATION display will indicate the number entered.

N.B. The duration is in TV Fields, i.e. 050 will give a duration of 1 second.

**HALT** Pressing this switch will stop a transition or a sequence. Pressing HALT again will cause EDIS to jump to the end of the transition or sequence. When HALT has been pressed once, RUN can be pressed to continue the transition or sequence or alternatively SEQUENCE RETURN can be pressed to run back to the beginning of the sequence or transition.

**SEQUENCE RETURN** Pressing this key is only permitted after HALT has been pressed or when a SEQUENCE has come to the end. When activated it will return to the start of the sequence.

**RUN** This switch will cause the sequence or transition to start. Pressing HALT will stop the sequence or transition.

**T-BAR** Moving the T-Bar allows manual operation of a transition between custom positions or a sequence.

N.B. 1 If the T-Bar Is not at the end of Its travel no other functions of EDIS will be permitted, attempts at commanding other functions will cause the two LEDs adjacent to the T-Bar to flash. Reset the T-Bar to the end of Its travel.

N.B. 2 The T-Bar Is intended for manual mix and for quick preview of moves. IT IS NOT ADVISABLE to use the T-Bar for execution of moves between keyframes or for sequences, as it is impractical to obtain smooth or stable moves via this method. USE THE RUN KEY after choosing a suitable duration for the move, only in this way will the extremely smooth potential of EDIS moves be available.

## MATTE ON

When this switch is activated then the areas of the EDIS output picture which do not contain the channel A or channel B picture, are filled with a coloured matte. This matte colour is adjusted using the SET UP switches and controls.

N.B. If matte is on in EFFECT, MIX or WIPE mode then the matte size is adjustable around the pictures using the SET UP controls. This is particularly useful for setting up a border OUTSIDE the picture.

## SET UP group

**MATTE SET** If this switch is pressed and matte is on, then the colour of the matte can be set up. If matte is on in WIPE or EFFECT modes with pictures smaller than normal size then the size of the MATTE can be adjusted. To adjust the matte colour use the set up controls, HUE, SAT, LUM and WIDTH to get the desired result.

**A BORDER SET** If this switch is pressed and the A BORDER is on then the colour and width of the A BORDER can be set up using the HUE, SAT, LUM and WIDTH controls.

**B BORDER SET** If this switch is pressed and the B BORDER is on then the colour and width of the B BORDER can be set up using the HUE, SAT, LUM and WIDTH controls.

N.B. If the picture is frozen or there is no input the border colour and size cannot be adjusted.

**JOYSTICK** The joystick is provided as a convenient method for adjusting the picture size and position. When activated, twisting the joystick anti-clockwise will reduce the size, twisting the joystick clockwise will increase the size. Shifting the joystick will shift the picture in the corresponding direction. To activate the joystick press SET A or SET B to change the size and position of channel A or channel B pictures.

**ASPECT** When this switch is on then the joystick can now be used to modify the picture aspect ratio from the normal 4 x 3 standard. In this mode the joystick does not position the picture and twisting the joystick will have no effect. Moving the joystick up decreases the picture height, moving the joystick down increases the picture height, moving the joystick right increases the picture width and moving the joystick left decreases the picture width.

N.B. If after setting a distorted aspect, you then require to reposition this distorted picture, simply depress ASPECT again and the joystick can then be used normally to reposition or alter size. DO NOT PRESS 'NORMALISE ASPECT' unless you want to return to a 4 x 3 aspect ratio picture.

**NORMALISE ASPECT** When this switch is pressed then the joystick will work in the normal way and the picture aspect ratio will be forced back to the standard 4 x 3 ratio.

**CROP** If CROP is on and SET is on for the channel to be set up, then moving the joystick left will crop the right hand side of the picture. If the joystick is moved right then the crop on the right side of the picture will be reduced. If the joystick is moved down then the top of the picture will be cropped, if the joystick is moved up then the crop at the top of the picture will be reduced.

N.B. As the picture is cropped it will also move. This is because the centre of the picture is being re-calculated to the centre of the cropped picture. The picture may be re-centred if required, using the joystick in the usual way.

**CROP** If CROP is on and SET is on for the channel to be set up then moving the joystick up will crop the bottom of the picture, moving the joystick down will reduce the amount of cropping on the bottom of the picture. Moving the joystick right will crop the left side of the picture and moving the joystick left will reduce the amount of the cropping on the left of the picture.

#### SETTING UP KEY FRAMES (CUSTOM POSITIONS)

As previously stated, the basic principle of EDIS is to work with key frames set up by the user.

The numeric display shows the CURRENT CUSTOM NUMBER (where the pictures are now on the output), and the GO TO CUSTOM NUMBER (where the pictures will go to at the end of the transition).

THE 'CUSTOM' SWITCH MUST BE ON, BEFORE SETTING UP A NEW CUSTOM POSITION.

To select a different current position simply enter two digits on the numeric key pad and the output will change to that custom position and display its number in the numeric display window.

To set up a particular custom position, the number of the custom position you wish to set up must be in the CURRENT POSITION display before it can be set up. The set up consists of exactly how the A and B pictures are desired to be. This means that the INPUT for A and B is part of this CUSTOM position, the STATIC settings for A, B including the border size and colour and the crop settings, the picture sizes and positions.

To select the destination custom position for a transition, press GO TO followed by two digits on the numeric keypad. The display GO TO CUSTOM NUMBER will now indicate the destination custom position.

To perform the transition between CUSTOM positions, CUSTOM must be illuminated and then press RUN. The transition time is shown on the display above DURATION, to modify the time press DURATION and enter three digits on the numeric keypad. Pressing RUN again, will perform the transition again, but notice now that the CURRENT and GO TO CUSTOM NUMBERS have reversed; so the transition will go back, unless the CURRENT or GO TO positions have been deliberately changed.

When performing the transition between two CUSTOM positions the transition can be modified by adding MIX, EFFECT or WIPE during the transition, also FLIP, TUMBLE or TRAJECTORY can be added to the transition for A or B picture moves, (see previous sections for details).

## SEQUENCE CREATION

EDIS has the ability to run a sequence of key frames to allow complex effects to be performed. A sequence can contain up to ten keyframes (0-9). For each position in the sequence a custom number is entered or CLEAR is entered to end the sequence before using all ten keyframes.

To set up the sequence- press SEQUENCE, press PROGRAM.

Press the number for the keyframe position you are going to use (normally '0', the first one). The keyframe position will be displayed above KEYFRAME on the numeric display panel. The CURRENT display will show what CUSTOM NUMBER has been programmed in this KEYFRAME position. The output of EDIS will also show this custom position.

Press ENTER then the two digit number of the CUSTOM position required.

Press the number for the next keyframe position you are going to use, followed by ENTER and the custom number. Continue this procedure until either KEYFRAME 9 has been specified, (in which case the sequence is full and no further action is necessary), OR, if you require a sequence of less than ten keyframes follow the procedure below:-

Say you finish at keyframe 5 (i.e. six keyframes)...

Press CLEAR '6', CLEAR '6', repeatedly (in this case four times), until the LEDs on '6' and all the numbers beyond are extinguished.

This has caused all higher keyframe numbers to shuffle down one position, so repeatedly pressing CLEAR and the number until all the higher number LEDs are off terminates the sequence.

Press PROGRAM. (This cancels the PROGRAM LED and stops any further programming)

The SEQUENCE LED is still illuminated, so now the sequence can be RUN.

The sequence can be run by pressing the RUN switch, the sequence will not run again, unless SEQUENCE RETURN is pressed or SEQUENCE is turned off by pressing another MODE switch, e.g. CUSTOM and then SEQUENCE is pressed again, or the SEQUENCE is RUN with REHEARSE on.

Effects can be added to the keyframe transitions within a sequence, e.g. FLIP, TUMBLE, TRAJECTORY, PUSH, CONCEAL, COMPRESS, WIPE and MIX. The PRIORITY switch will affect the sequence running and IS NOT SAVED within the sequence, so may need changing for a particular sequence.

## EDIS TEST SEQUENCE

Turn on POWER to EDIS.

Press '9' then '0' on the numeric key pad (i.e. select custom number 90).

Press 1 on INPUT CH A

Press 2 on INPUT CH B

Press TRACK (track led should be on).

Turn joystick centre anti-clockwise until picture is quite small, (say quarter size).

Press TRACK (it should now be off).

Press SET B (its LED should come on).

Move the joystick down to separate the two pictures.

Press BORDER ON CH A.

Press BORDER ON CH B.

Press A BORDER SET.

Adjust HUE, SAT, LUM, WIDTH to give the desired border colour and width for the A channel, green for instance.

Press B BORDER SET.

Adjust HUE, SAT, LUM, WIDTH to match the border on the A channel.

Press TRACK.

This has now set up the border for the starting custom position.

The next step is to COPY this custom position to all the others.

PRESS	COPY 9, 1	(i.e. 91)
	COPY 9, 2	(i.e. 92)
	COPY 9, 3	(i.e. 93)
	COPY 9, 4	(i.e. 94)
	COPY 9, 5	(i.e. 95)
	COPY 9, 6	(i.e. 96)
	COPY 9, 7	(i.e. 97)
	COPY 9, 8	(i.e. 98)
	COPY 9, 9	(i.e. 99)

Turn joystick anti-clockwise and push it top left.

The picture should now be at zero size in the top left corner, see page 23 for diagrams.

Press 9, 1 (i.e. 91)  
Press SET A  
Press 3 on INPUT CH A  
Press 2 on INPUT CH B

Adjust picture with joystick to position shown as custom number 91 on diagram (page 23).

Press 9, 2 (i.e. 92)  
Press SET A  
Press 3 on INPUT CH A  
Press 4 on INPUT CH B

Adjust picture with joystick to position shown as custom number 92 on diagram (page 23).

Press 9, 3 (i.e. 93)  
Press SET A  
Press 1 on INPUT CH A  
Press 4 on INPUT CH B

Adjust picture with joystick to position shown as custom number 93 on diagram (page 23).

Press 9, 4 (i.e. 94)  
Press SET A  
Press 1 on INPUT CH A  
Press 2 on INPUT CH B

Adjust picture with joystick to position shown as custom number 94 on diagram (page 23).

Press 9, 5 (i.e. 95)  
Press SET A  
Press 3 on INPUT CH A  
Press 2 on INPUT CH B

Adjust picture with joystick to position shown as custom number 95 on diagram (page 24).

Press 9, 6 (i.e. 96)  
Press SET A  
Press 3 on INPUT CH A  
Press 4 on INPUT CH B

Adjust picture with joystick to position shown as custom number 96 on diagram (page 24).

Press 9, 7 (i.e. 97)  
Press SET A  
Press 1 on INPUT CH A  
Press 4 on INPUT CH B

Adjust picture with joystick to position shown as custom number 97 on diagram (page 24).

Press 9, 8 (i.e. 98)  
Press SET A  
Press 1 on INPUT CH A  
Press 2 on INPUT CH B

Adjust picture with joystick to position shown as custom number 98 on diagram (page 24).

Press 9, 9 (i.e. 99)  
Press SET A  
Press 3 on INPUT CH A  
Press 2 on INPUT CH B

Adjust picture with joystick to position shown as custom number 99 on diagram (page 24).

Now the individual custom positions (90 - 99) can be entered as keyframes within the sequence.

Press SEQUENCE.

Press PROGRAM.

Press 0, ENTER, 9, 0 (keyframe 0 custom position 90).

Ensure the following are on, and if not, press the appropriate switch:-

SET A, EFFECT, TRAJECTORY, COMPRESS and RIGHT ARROW.

Press 1, ENTER, 9, 1 (keyframe 1 custom position 91).

Ensure the following are on, and if not, press the appropriate switch:-

SET A, EFFECT, TRAJECTORY, COMPRESS and RIGHT ARROW.

Press 2, ENTER, 9, 2 (keyframe 2 custom position 92).

Ensure the following are on, and if not, press the appropriate switch:-

SET A, EFFECT, TRAJECTORY, COMPRESS and RIGHT ARROW.

Press 3, ENTER, 9, 3 (keyframe 3 custom position 93).

Ensure the following are on, and if not, press the appropriate switch:-

SET A, EFFECT, TRAJECTORY, COMPRESS and RIGHT ARROW.



Press 4, ENTER, 9, 4 (keyframe 4 custom position 94).

Ensure the following are on, and if not, press the appropriate switch:-

SET A, EFFECT, TRAJECTORY, COMPRESS and UP ARROW.

Press 5, ENTER, 9, 5 (keyframe 5 custom position 95).

Ensure the following are on, and if not, press the appropriate switch:-

SET A, EFFECT, TRAJECTORY, COMPRESS and UP ARROW.

Press 6, ENTER, 9, 6 (keyframe 6 custom position 96).

Ensure the following are on, and if not, press the appropriate switch:-

SET A, EFFECT, TRAJECTORY, COMPRESS and LEFT ARROW.

Press 7, ENTER, 9, 7 (keyframe 7 custom position 97).

Ensure the following are on, and if not, press the appropriate switch:-

SET A, EFFECT, TRAJECTORY, COMPRESS and LEFT ARROW.

Press 8, ENTER, 9, 8 (keyframe 8 custom position 98).

Ensure the following are on, and if not, press the appropriate switch:-

SET A, EFFECT, TRAJECTORY, COMPRESS and LEFT ARROW.

Press 9, ENTER, 9, 9 (keyframe 9 custom position 99).

Ensure the following are on, and if not, press the appropriate switch:-

SET A, EFFECT, TRAJECTORY, COMPRESS and LEFT ARROW.

This has now entered all the required keyframes so the sequence is now ready to be run.

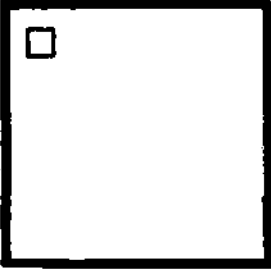
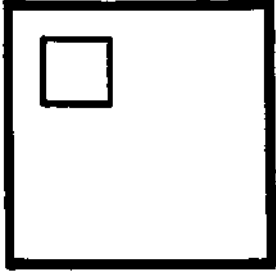
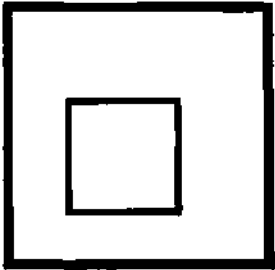
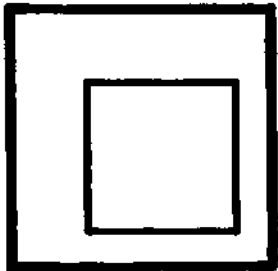
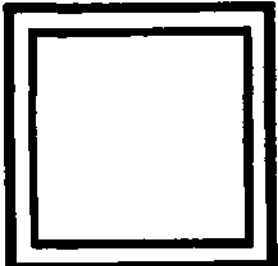
Press PROG (now it should be out of program mode).

Press DURATION (now enter the running time).

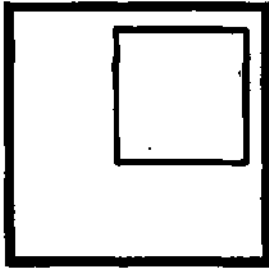
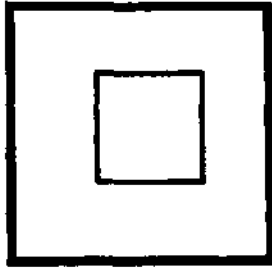
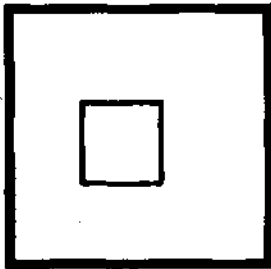
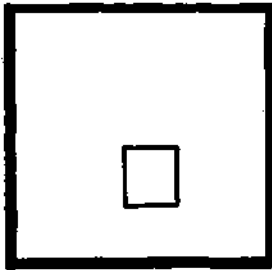
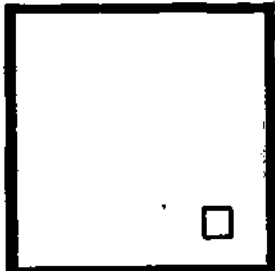
Press 4, 5, 6

Press RUN . . . .

SAMPLE TEST SEQUENCE

INPUTS	CUSTOM NUMBER		SEQUENCE KEYFRAME NUMBER	COMPRESS DIRECTION
Channel A = 1 Channel B = 2	90		0	→
Channel A = 3 Channel B = 2	91		1	→
Channel A = 3 Channel B = 4	92		2	→
Channel A = 1 Channel B = 4	93		3	→
Channel A = 1 Channel B = 2	94		4	↑

SAMPLE TEST SEQUENCE

INPUTS	CUSTOM NUMBER		SEQUENCE KEYFRAME NUMBER	COMPRESS DIRECTION
Channel A = 3 Channel B = 2	95		5	↑
Channel A = 3 Channel B = 4	96		6	←
Channel A = 1 Channel B = 4	97		7	←
Channel A = 1 Channel B = 2	98		8	←
Channel A = 3 Channel B = 2	99		9	←

## MANUAL MOVES

As well as very complex moves EDIS allows very simple manual operations such as MIXES, WIPES, etc. If you are unfamiliar with EDIS then here are details of how to do some of the effects.

N.B. Press NORMALISE ALL before trying any of these simple effects.

MIX Press MIX twice and move the T-Bar to perform a mix between the channel A picture and the channel B picture.

WIPE Press WIPE twice followed by the wipe pattern required. Move the T-Bar to perform the wipe. If a coloured border is required on the wipe press WIPE BORDER.

PUSH Press EFFECT twice and the direction required for the PUSH and move the T-Bar.

REVEAL Press EFFECT twice, press REVEAL and the direction required. Move the T-Bar.

CONCEAL Press EFFECT twice, press CONCEAL and the direction required. Move the T-Bar.

COMPRESS Press EFFECT twice, press COMPRESS and the direction required. Move the T-Bar and the current picture will compress and the hidden picture will expand.

COMPRESS - CONCEAL Press EFFECT twice, press CONCEAL, press COMPRESS and the direction required. Move the T-Bar and the current picture will be concealed by the other picture expanding over it.

COMPRESS - REVEAL Press EFFECT twice, press REVEAL, press COMPRESS and the direction required. Move the T-Bar and the current picture will COMPRESS revealing the other picture.

All of the above can be performed with non-standard size pictures, but do NOT press NORMALISE ALL before pressing the appropriate switches.

Once you can make a few simple moves or effects, try and use the CUSTOM mode as previously described. The logic will quickly become familiar and only by using the custom keyframe technique will the power of EDIS be fully realised.